What is claimed is:

1. A method of applying an electrically conductive carbon coating to a non-conductive surface, including the following, in any operative order:

A. providing a substrate having at least one non-conductive surface portion;

B. contacting at least said nonconductive surface portion with a conditioning agent including an amount of a cationic substantive conditioner effective to deposit a film of said conditioner on said nonconductive surface portion, thereby forming a conditioned surface;

C. contacting said conditioned surface with a carbon dispersion including:

i. electrically conductive carbon having a mean particle size no greater than about 50 microns, and

ii. a water dispersible binding agent to form a substantially continuous, electrically conductive carbon coating on said conditioned surface;

wherein said carbon and said binding agent are present in amounts effective to provide an electrically conductive coating when said composition is applied to said conditioned surface; and

D. fixing said electrically conductive coating on said conditioned surface by applying an aqueous acid to said electrically conductive coating.

2. A printed wiring board comprising:

A. at least two conductive circuit layers separated by nonconductive material;

B. at least one recess in said nonconductive material defined by a nonconductive surface intersecting at least two of said conductive circuit layers;

C. an electrically conductive coating on said nonconductive surface, said coating including electrically conductive carbon having a mean particle size not greater than about 1 micron and a water-dispersible organic binding agent, wherein said coating is electrically conductive, allowing electrical current to flow between the two conductive circuit layers, and accepts electroplating to provide a surface at least substantially free of visible voids.

3. The printed wiring board of claim 2, having a resistivity between said conductive circuit layers of less than about 1000 ohms prior to electroplating.

4. The printed wiring board of claim 2, having a resistivity between said conductive circuit layers of less than about 600 ohms, prior to electroplating.

5. The printed wiring board of claim 2, having a resistivity between said conductive circuit layers of less than about 400 ohms, prior to electroplating.

6. The printed wiring board of claim 2, having a resistivity between said conductive circuit layers of less than about 250 ohms, prior to electroplating.

7. The printed wiring board of claim 2, having a resistivity between said conductive circuit layers of less than about 80 ohms prior to electroplating.

8. The printed wiring board of claim 2, having a resistivity of less than about 60 ohms between said conductive circuit layers, prior to electroplating.

9. The printed wiring board of claim 2, having a resistivity between said conductive circuit layers of less than about 30 ohms, prior to electroplating.

10. The printed wiring board of claim 2, having a resistivity between said conductive circuit layers of less than about 10 ohms, prior to electroplating.

11. The printed wiring board of claim 2, having a resistivity between said conductive circuit layers of less than about 2 ohms, prior to electroplating.

12. The printed wiring board of claim 2, including a multiplicity of said conductive through holes including said coating.

13. The printed wiring board of claim 2, wherein said coating is not greater than about 12 microns thick.

14. The printed wiring board of claim 2, wherein said coating is not greater than about 7 microns thick.

15. The printed wiring board of claim 2, herein said coating is not greater than about three microns thick.

16. The printed wiring board of claim 2, wherein said coating is not greater than about one micron thick.

17. The printed wiring board of claim 2, wherein said coating is free of lumpiness.

18. The printed wiring board of claim 2, wherein said water-dispersible organic binding agent is selected from the group consisting of monosaccharides, polysaccharides, and combinations thereof.

19. The printed wiring board of claim 2, wherein said electrically conductive carbon comprises graphite.

20. A printed wiring board including:

A. at least two conductive circuit layers separated by nonconductive material;

B. at least one recess in said nonconductive material defined by a nonconductive surface intersecting at least two of said conductive circuit layers;

C. an electrically conductive coating on said nonconductive surface not greater than about 12 microns thick, said coating including electrically conductive graphite having a mean particle size of less than about 1 micron and a water-dispersible polysaccharide organic binding agent, wherein said coating has a resistivity between said conductive circuit layers of less than about 250 ohms, prior to electroplating, and accepts electroplating to provide a surface at least substantially free of visible voids.

21. The printed wiring board of claim 20, further comprising an electroplated layer deposited on at least a portion of said electrically conductive coating.

22. The printed wiring board of claim 21, further comprising a solder layer deposited on at least a portion of said electroplated layer.